REMARKS

Claims 18-28, 31-35, 39 and 40 are pending in this application. Claims 18 and 19 have both been amended by the introduction of the term "non-fibrous". Thus, the two claims as amended now specify that the solid carrier they refer to is "non-fibrous". The basis for this amendment can be found at page 7 line 4 of the application as filed. No new matter has been added by way of any claim amendments. Additionally, a clean copy of all pending claims (including the amendments to claims 18, 19, and 40) are attached to this communication, as requested by the Examiner. Referring to the numbered paragraphs of the Office Action dated 25 September 2001:

1. Claim 40 has been amended wholly in accordance with the Examiner's proposal. We assume therefore that this deals with the Examiner's comments at this paragraph.

3-6. The Examiner rejects claims 18, 19, 26 to 28 and 31 under 35 U.S.C. 103(a) as being unpatentable over Nielsen *et al.* (WO-A-95/28850) in view of Jacobsen *et al.* (WO-A-92/12645).

In essence, the Examiner's argument is that one of skill in the art would have a reasonable expectation of success at making a phytase-containing granulate of 10,000 FTU/g, as referred to by Nielson *et al.*, comprising 2 to 40% cellulose (an edible carbohydrate), because Jacobsen *et al* shows that enzyme-containing granulates wherein the granulates contain up to 40% cellulose can be used in animal feeds.

Jacobsen *et al.* discloses a T-granulate which is coated with a coating agent comprising a high melting fat or wax as a component of a mixture which is proposed for use as a fodder if the mixture is steam treated and subsequently palletised. At page 2 lines 14 and 15, Jacobsen *et al.* define a T-granulate as:

"a granulate produced according to US-A-4,106,991, i.e. a granulate containing 2 to 40% of finely divided cellulose fibers." [Emphasis added].

It can therefore be seen that Jacobsen *et al.* relates only to granulates in which a carrier comprising 2 to 40% of finely divided cellulose fibers is used. If follows that Jacobsen *et al.* relates only to granulates wherein the carrier has to be fibrous in nature. By contrast, claims 18 and 19 of the present application have now been amended so that they are directed only to granulates (and compositions comprising such granulates) in which the carrier is non-fibrous. Page 7 lines 4 and 5 of the application as filed describes how non-fibrous carriers allow for easier granulation because fibrous materials can prevent granulation by extrusion.

It is submitted that a combination of Nielson *et al.* and Jacobsen *et al.* cannot be combined in order to achieve a granulate falling within the scope of claims 18 and 19 as amended. Nielson *et al.* deals with granulates which do not comprise an edible carbohydrate polymer carrier. Even if one of skill in the art were to combine that teaching with the teaching of a fibrous carrier-based granulate as taught by Jacobsen *et al.*, that person of skill in the art could still not achieve a granulate comprising an edible carbohydrate polymer wherein the carrier is non-fibrous: the two documents could only be combined to arrive at a fibrous carrier-based granulate.

On the basis of these arguments, it is submitted that claims 18 and 19 as amended are indeed patentable over Nielson *et al.* in view of Jacobsen *et al.* Claims 26 to 28 are dependent upon claim 19 and claim 31 refers back to claim 18. On that basis, it is submitted that claims 26 to 28 and 31 are patentable over the two documents cited by the Examiner for the reasons set out above in respect of claims 18 and 19.

7-10. The Examiner rejects claim 20 under 35 U.S.C. 103(a) as being unpatentable over Nielsen *et al.* (WO-A-95/28850) in view of Jacobsen *et al.* (WO-A-92/12645). Claim 20 is dependent upon claim 19 and, on that basis, it is submitted that claim 20 is patentable over the two documents cited by the Examiner for the reasons set out above in respect of claim 19.

11-14. The Examiner rejects claims 21 to 23 under 35 U.S.C. 103(a) as being unpatentable over Nielsen *et al.* (WO-A-95/28850) in view of Jacobsen *et al.* (WO-A-92/12645) as applied to claim 19 and further in view of Markussen *et al.* (US-A-4,106,991). The Examiner's argument is that a combination of Neilson *et al.* and Jacobsen *et al.* renders claim 19 unpatentable and that Markussen *et al.* teach the additional features provided in claims 21 to 23.

It is submitted, for the reasons set out above, that claim 19 is in fact patentable over a combination of Neilson *et al.* and Jacobsen *et al.* and therefore that claims 21 to 23, which are all ultimately dependent upon claim 19, are patentable over the combination of three documents cited by the Examiner. The fact that Markussen *et al.* teaches derivatised cellulose is irrelevant to the patentability of claims 21 to 23 if claim 19 is patentable over a combination of Neilson *et al.* and Jacobsen *et al.* It is submitted that that is indeed the case.

15-18. The Examiner rejects claims 19 and 24 under 35 U.S.C. 103(a) as being unpatentable over Nielsen *et al.* (WO-A-95/28850) in view of Jacobsen *et al.* (WO-A-92/12645). It is submitted that claim 19 is patentable over that combination of documents for the reasons set out above. Claim 24 is dependent upon claim 19 and, on that basis, it is submitted that claim 24 is patentable over the two documents cited by the Examiner too.

19-22. The Examiner rejects claims 19, 21, 22, 25 and 39 under 35 U.S.C. 103(a) as being unpatentable over Nielsen *et al.* (WO-A-95/28850) in view of Rokey *et al.* (US-A-5,480,673). Rokey *et al.* teaches an extrusion process for the production of animal feeds having high soluble protein contents wherein respective starch-bearing and proteinaceous ingredient fractions are differentially processed so as to obtain an extruded final product containing soluble protein. It is submitted, however, that even if one of skill in the art were to combine that teaching with the teaching set out in Nielson *et al.*, he/she could still not achieve a granulate falling within the scope of claim 19.

That is because Rokey *et al.* relates to an extrusion process for the production of animal feeds having a high soluble protein content wherein any starch present in the resulting animal feed is cooked. This can be seen in the "Summary of the invention" section of Rokey *et al.* at column 2, lines 27 to 29. That passage refers to:

"....an extruded edible body including a matrix which comprises extrusion cooked starch-bearing grain." [Emphasis added].

Therefore, when the teaching of Rokey *et al.* is considered in context and as a whole, it can be seen that any attempt by one of skill in the art to combine Rokey *et al.* with Nielson *et al.*, in the manner the Examiner suggests, results in a final product which is cooked. That is of course highly significant in the context of the present application. Claim 19 of the present application is directed to a phytase-containing granulate which contains active phytase. This is set out explicitly in the first line of claim 19 which refers to:

"A granulate having a phytase activity of at least 6000 FTU per gram....." [Emphasis added].

Thus, the processing used to form the granulate set out in claim 19 of the present application necessarily excludes processing techniques wherein the granulate is cooked. Clearly,

any cooking would lead to inactivation of any enzyme present and no phytase activity would be observed.

By contrast, any attempt to combine the teaching of Nielson *et al.* with Rokey *et al.* would have to include the extrusion process set out in the latter of those two documents which, because the granulate is cooked, would inevitably result in a granulate with no enzyme activity. In other words, a hypothetical granulate produced according to a combination of Nielson *et al.* and Rokey *et al.* would be a cooked extruded feed in which all the enzyme present, for example phytase, would be inactive. That sort of granulate falls outside the scope of claim 19 which is directed to a granulate which has a phytase activity of at least 6,000 FTU per gram.

On this basis on these arguments, it is submitted that the granulate of claim 19 is indeed patentable over a combination of Nielson *et al.* and Rokey *et al.*

Claims 21, 22, 25 and 39 are all ultimately dependent upon claim 19 and, on that basis, it is submitted that claims 21, 22, 25 and 29 are patentable over a combination of Neilson *et al.* and Rokey *et al.* too.

23-26. The Examiner rejects claims 18 and 31 to 35 under 35 U.S.C. 103(a) as being unpatentable over Nielsen *et al.* (WO-A-95/28850) in view of Jacobsen *et al.* (WO-A-92/12645). It is submitted that claim 18 is patentable for the reasons set out above and that claims 31 to 35, which all ultimately refer back to claim 18, are therefore patentable too.

27-30. The Examiner rejects claims 21, 22, 39 and 40 under 35 U.S.C. 103(a) as being unpatentable over Nielsen *et al.* (WO-A-95/28850) in view of Jacobsen *et al.* (WO-A-92/12645). Claims 21, 22, 39 and 40 are all ultimately dependent on claim 19 and include the further feature of

the granulate comprising soy oil, canola oil or hydroxypropylmethyl cellulose. The Examiner points out that Aulik *et al.* teaches the use of soy or canola oil as lubricating components in the preparation of processed foods and the use of hydroxypropylmethyl cellulose as an agent to control the structural properties of foods.

That may well be the case. However, it is submitted that if claim 19 is patentable over a combination of Neilson *et al.* and Jacobsen *et al.* the teaching of Aulik *et al.* is irrelevant. It is submitted that, for the reasons set out above, claim 19 is patentable over a combination of Neilson *et al.* and Jacobsen *et al.* and therefore that claims 21, 22, 39 and 40, which are dependent upon claim 19, are patentable too.

In view of the arguments stated above, it is believed that pending claims 18-28, 31-35, 39 and 40 of this application are allowable and that all rejections should be withdrawn. Applicants request an interview with the Examiner, if the Examiner feels that it would assist her in reaching a determination on the pending claims. Favorable reconsideration and allowance of the pending claims is, therefore, courteously solicited.

Respectfully submitted,

McDonnell Boehnen
Hulbert & Berghoff

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Alison J. Baldwin
Reg. No. 48,968